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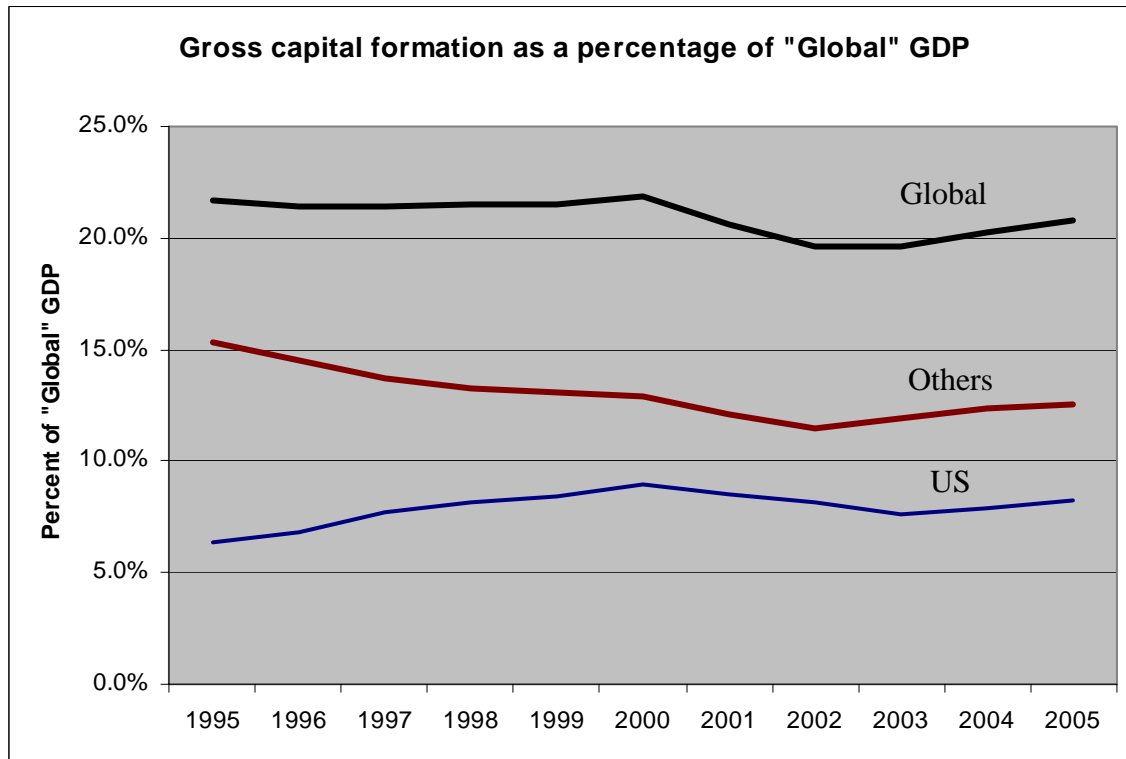
Interest rates are widely regarded as unusually low. Former Fed Chairman Alan Greenspan pointed to one aspect of this when he spoke of the “conundrum” that the Fed began tightening monetary policy in May 2004, yet longer-term interest rates fell.(1) Chairman Ben Bernanke went further, suggesting that interest rates were being depressed by a global excess of saving.(2) In a recent article in *Networks Financial Institute's Financial Focus*, I explained that lower interest rates could as readily result from low demand for new capital financing as from unusually large saving.(3) Moreover, I showed that there had been no appreciable change in US saving since 2001, with an adjusted gross saving rate steadily hovering at the lowest levels since 1948, about 10 percent of GDP.(4) At least for the US, it does not appear that excessive saving has depressed interest rates, especially not lately when the saving rate has not changed.

This note looks at whether capital spending and its financing have been weak, possibly accounting for declining real interest rates. Private investment has been weak by historical standards and this has probably reflected low rates of return to global investment, as well as significant changes in the prices of capital goods relative to other goods and services. The first reason is a serious threat to the world economy because, if it continues, world capital formation will be depressed and hold back advances in productivity and economic development. The second reason is more benign: the same pace of capital formation requires less financing because capital goods have been declining in relative price. Thus, a lower share of spending on capital goods has masked one of the highest levels of US real investment on record. Unfortunately the decline in capital spending is probably too large to be explained by price developments. Instead it is likely that real private capital formation is in decline.

Global capital spending has weakened over the past decade, but not in the US

Chart 1 shows that global gross capital formation has declined relative to GDP since 2000 for the 27 countries of the European Union, the US and Japan. These 28 countries account for most of world GDP and are referred to as the “global” total here. Global gross capital formation was fairly steady at about 21.5 percent of GDP from 1995 to 2000, but then fell, reaching a low of 19.6 percent in 2002-03 and recovering slightly in 2003-05. By 2005, it was about 1.1 percent of GDP lower than it had been in 2000, the equivalent of about \$335 billion.

Chart 1: Global capital spending is lower since 2000.



"Global" includes the 25 members of the European Union, the United States and Japan

Source: Eurostat, Bureau of Economic Analysis

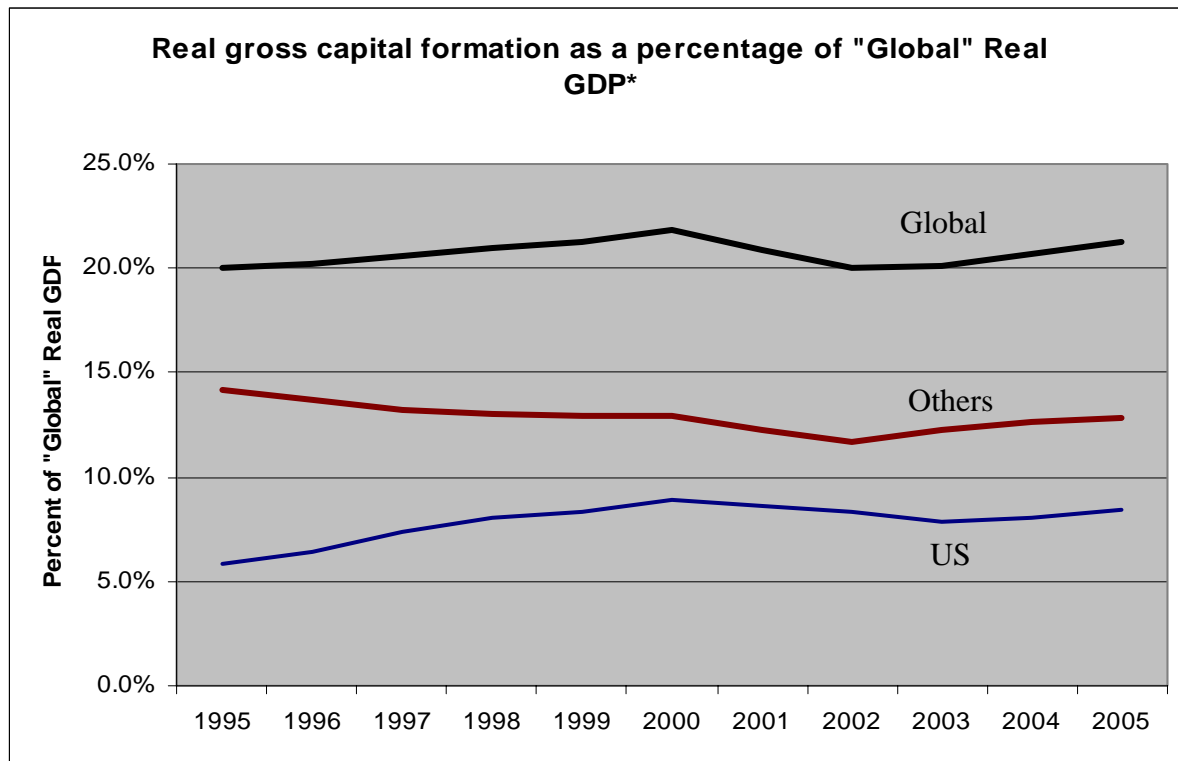
This decline is not so apparent in the US because, as the chart shows, gross capital formation has not been as weak here. Indeed, US gross capital formation rose from about 6.3 percent of global GDP to a peak of 8.9 percent in 2000, then fell to about 7.7 percent in 2003 and rebounded to 8.2 percent of global GDP in 2005. In every year since 2000, except for 2003, US gross capital formation was larger than its new economy average of 7.7 percent of global GDP. In contrast, the rest of the world's gross capital formation fell in 2000 and then fell even more until 2003. There has been a rebound in 2004-05, but in the rest of the world, gross capital formation has been lower in every year since 2000 than in 2000 and even lower than its 1995-2000 level. Thus it is not surprising that the decline in capital formation is less noticeable in the US: it is a smaller decline and leaves the US at a near record pace of capital formation. For the world as a whole, however, gross capital formation has been lower for the past five years than in the earlier six years.

Gross capital formation is a nominal measure and so it measures spending, not units of capital or capital services. This is the appropriate measure because this is what has to be financed and the measure that influences interest rates. Underlying both observed interest rates and spending, however, are real measures of capital formation and it is the real measures that influence the productivity of capital, and the real component of interest rates. Since the relative price of capital goods has been falling, a given share of GDP spent on gross capital formation can buy more capital goods than otherwise so that real spending is higher relative to real GDP than the nominal measure indicates. For the US,

this makes a great deal of difference. As shown in the *Research Buzz* for January 2006, real private fixed investment has remained unusually high in this decade. Even at its lowest level in 2003 it was higher than in any year from 1947-96 as a percent of real GDP and in late-2005 it was more than 50 percent larger than the 1947-96 average.

An indication of the quantity of capital formation relative to real GDP can be found by adjusting the nominal shares in Chart 1 by the relative price of capital goods. Unfortunately these prices are not available for the data used here, so the relative implicit price deflator for gross capital goods in the US is used for all three groups. When this is done, none of the key conclusions above are altered, although the magnitude of the weakness abroad and globally is reduced. This is shown in Chart 2. Nonetheless, at least part of weakness in global investment spending has apparently been due to the decline in the relative price of capital goods at least to the extent that those prices elsewhere mirror the declines experienced in the US. In effect part of the decline in capital spending is likely due to the fact that capital goods have become cheaper, so more real investment can be financed at a lower price.

Chart 2: Real capital formation has also declined globally since 2000.



"Global" includes the 25 members of the European Union, the United States and Japan

Source: Eurostat, Bureau of Economic Analysis

*Based on the U.S. relative price of capital goods. (Year 2000 equals 100)

Another factor that could be important is that the gross capital spending measures used in the chart are for both private and government capital spending. The latter is relatively

larger in the rest of the world than in the US as a share of GDP. More important, government capital formation does not directly affect capital productivity and real interest rates, nor does it directly affect changes in productivity or the standard of living. It would be desirable to take public spending out of the ratios shown in the charts.

Interest rates have been relatively low over the past few years because the financing demands for new capital goods have declined relative to GDP. In past, this may reflect new technologies that have lowered the relative price of capital goods so that the same capital goods require less expenditure and financing relative to GDP. Unfortunately, it also appears that a real decline in investment relative to GDP accounts for low real interest rates. Such low rates of return and low investment, if they persist, will slow productivity growth and economic development.

Endnotes

- (1) See Alan Greenspan, "Testimony," *Monetary Policy Report to Congress*, Board of Governors of the Federal Reserve System, Feb.16, 2005.
- (2) See Ben Bernanke, "The Global Saving Glut and the US Current Account Deficit," Sandridge Lecture, Virginia Association of Economists, Richmond, Va., March 10, 2005, and Homer Jones Lecture, St. Louis, April 14, 2005. Lawrence H. Summers points to an excess of saving outside the US for the decline in world interest rates. See his "Reflections on Global Imbalances and Emerging Markets Reserve Accumulation," L.K. Jha Memorial Lecture, Reserve Bank of India, March 24, 2006. www.president.harvard.edu/speeches
- (3) See John A. Tatom, "Are We Saving?" *Financial Focus*, Spring 2006, pp. 35-37.
- (4) The adjustment involves subtracting government purchases of capital goods from the official measure of gross saving because the funds to make these acquisitions are included in government saving.. The resulting figure is gross saving available to finance private sector investment in the US or abroad.